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**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q63077

Seiji UMEMOTO, *et al.*

Appln. No.: 09/782,201

Group Art Unit: 2871

Confirmation No.: 9861

Examiner: Tai V. DUONG

Filed: February 14, 2001

For: LIQUID-CRYSTAL DISPLAY DEVICE AND COLORED RESIN SUBSTRATE

**SUBMISSION OF APPEAL BRIEF**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

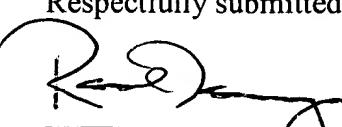
P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In response to the Notification of Non-Compliant Appeal Brief mailed March 23, 2005, submitted herewith please find an Appeal Brief. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,



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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: April 6, 2005

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For: LIQUID-CRYSTAL DISPLAY DEVICE AND COLORED RESIN SUBSTRATE

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellants submit the following:

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**I. REAL PARTY IN INTEREST**

The real party in interest is Nitto Denko Corporation, the assignee of the present application. The assignment was recorded on February 14, 2001, at reel 011570, frame 0386.

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**II. RELATED APPEALS AND INTERFERENCES**

Appellants, Appellants' counsel, and the assignee of the application are not aware of any other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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**III. STATUS OF CLAIMS**

Claims 1-5 and 7-8 are pending in the application.

Claims 1-5 and 7-8 are rejected.

Claims 1-5 and 7-8 are being appealed.

Claims 1-5 and 7-8 are set forth in their entirety in the Claims Appendix submitted herewith.

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**IV. STATUS OF AMENDMENTS**

On August 23, 2004, a Request for Reconsideration Under 37 C.F.R. § 1.116 was filed in response to the final Office Action mailed May 21, 2004.

The Request for Reconsideration did not include an amendment to the claims.

The Advisory Action mailed September 15, 2004, indicates that the remarks submitted in the August 23<sup>rd</sup> Request for Reconsideration have been considered but do not place the application in condition for allowance. The Examiner attached an additional page to the Advisory Action and provided therein comments on why the application is not in condition for allowance.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Claim 1 is an independent claim. It is drawn to a liquid-crystal display device. Paragraph [0005] of the specification and FIG. 1. The liquid-crystal display device comprises a liquid-crystal panel. Paragraph [0007]. The liquid-crystal panel includes a back side substrate (1) constituted by a colored resin substrate (11) having an electrode (12). Paragraphs [0007] through [0011] and [0013], and FIG. 1. The liquid-crystal panel also includes a visual side transparent substrate (2, 21) having a transparent electrode (22). Paragraphs [0012] and [0013], and FIG. 1. The liquid-crystal panel further includes a reflection type liquid-crystal layer (3) interposed between the visual side substrate (2) and the back side substrate (1). Paragraphs [0007], [0016], and [0017], and FIG. 1.

Claim 2 is also an independent claim. It is drawn to a backside substrate (1). FIG. 1. The backside substrate (1) comprises a colored resin substrate (11) which is formed of at least a mixture of a transparent resin and a colorant. Paragraphs [0007] through [0011], and FIG. 1. The backside substrate (1) also comprises a transparent electrically conductive film on at least one side of the colored resin substrate. Paragraph [0013] through [0015], and FIG. 1. Claim 2 requires the backside substrate (1) to be attached to a visual side substrate (2, 21) having an electrode (22) and a transparent resin. Paragraphs [0007], [0012], and [0016], and FIG. 1.

Claim 3 depends from Claim 2. It requires the colored resin substrate to be not thicker than 1 mm. Paragraph [0011].

Claim 4 depends from Claim 2. It requires the colored resin substrate to be black. Paragraph [0011].

Claim 5 depends from Claim 2. It requires the colored resin substrate to have a glass transition temperature of not lower than 90°C. Paragraph [0008].

Claim 7 depends from Claim 1. It requires that the back side substrate (1) disposed on the back side of the liquid-crystal panel be composed of a colored resin substrate (11) formed of

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at least a mixture of a transparent resin and a colorant. Paragraphs [0007] through [0011], and FIG. 1. It also requires the presence of a transparent electrically conductive film on at least one side of the colored resin substrate to form the backside substrate. Paragraphs [0013] through [0015]. It further requires the reflection type liquid-crystal layer (3) to be of a macromolecular dispersion type or of a cholesteric liquid-crystal type. Paragraph [0017] and FIG. 1.

Claim 8 depends from Claim 1. It requires the back side substrate to absorb light. Paragraph [0006].

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**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The issues presented for review are:

- (1) whether the Examiner erred in rejecting Claims 1-2, 4, and 7-8 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,493,430 ("Lu") in view of U.S. Patent No. 5,648,197 ("Kuroda"); and
- (2) whether the Examiner erred in rejecting Claims 3 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Lu and Kuroda, as applied to Claim 2, and further in view of U.S. Patent No. 5,645,901 ("Fukuchi").

**VII. ARGUMENT**

**(1) §103(a) Obviousness Rejection of Claims 1-2, 4, and 7-8**

Claims 1-2, 4, and 7-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu in view of Kuroda.

To summarize, the Examiner has taken the position that Lu fails to disclose a colored resin substrate. Rather, Lu discloses a substrate 12 and a colored layer 18 thereon.

The Examiner turns to Kuroda to assert that the use of a colored resin substrate was known. Specifically, the Examiner asserts that Kuroda discloses a transparent substrate with a light absorbing layer (FIG. 1) or, alternatively, a colored resin substrate (FIG. 4).

The Examiner asserts that it is common practice to employ a dual function layer or element in the liquid crystal art. In addition, the Examiner notes that the colored resin substrate in Kuroda provides the same function of light absorption as does Lu. Thus, the Examiner concludes that the use of a colored substrate having the functions of a substrate and a color filter would have been obvious even though Kuroda is not directed to liquid crystal technology. The Examiner attached evidence to the final Office Action mailed May 21, 2004, in order to show that the concept of employing a dual function layer or element is common in the liquid crystal art.

In short, the Examiner is basically arguing that it would have been obvious to modify Lu in view of the common knowledge in the art of liquid crystal technology (use of single substrate for two functions) and the Kuroda reference (use of a colored resin substrate).

**The Error in the Rejection**

The error in the rejection is that the combination of Lu and Kuroda does not establish a *prima facie* case of obviousness against the subject matter of Claims 1-2, 4, and 7-8.

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Why Claims 1-2, 4, and 7-8 are Patentable Under 35 U.S.C. § 103

Focusing on independent Claims 1 and 2, they each require the presence of a colored resin substrate.

Independent Claims 1 and 2 (and dependent Claims 4 and 7-8) are patentable because there has not been identified a reasonable motivation or suggestion to modify Lu by replacing its substrate 12 and colored layer 18 with the colored resin substrate of Kuroda.

In this regard, the mere possibility that the prior art may be modified so as to arrive at the claimed invention does not render obvious the invention unless the prior art suggested the desirability of the modification. The suggestion to modify must be “clear and particular.” In re Sang Su Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433-1434 (Fed. Cir. 2002); Winner Int’l Royalty Corp. v. Ching-Rong Wang, 202 F.3d 1340, 1348-1349, 53 USPQ2d 1580, 1586-1587 (Fed. Cir. 2000).

In the present case, the only motivation identified by the Examiner for combining Lu and Kuroda is not supported by the disclosures of Lu and Kuroda or by the evidence attached to the May 21<sup>st</sup> final Office Action.

The alleged motivation for the prior art rejection is based on “reducing the thickness, the weight and the manufacturing cost of the LCD device”<sup>1</sup>; however, neither Lu nor Kuroda is concerned with these features or objectives. **Only the present application** is concerned with these features. Furthermore, the evidence attached by the Examiner to the May 21<sup>st</sup> final Office Action is simply a definition of subclass 162 and a schedule of class 349. It does not make up for the deficiencies of Lu and Kuroda; it does not provide a “clear and particular” suggestion to modify Lu by replacing its substrate 12 and colored layer 18 with the colored resin substrate of Kuroda. Thus, the motivation for the alleged combination is only based on hindsight.

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<sup>1</sup> See final Office Action, sentence bridging pages 2 and 3.

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There are additional reasons why the combination of Lu and Kuroda does not establish a *prima facie* case of obviousness against the subject matter of Claims 1-2, 4, and 7-8.

Lu discloses a colored layer 18 formed on the inside of the substrate 12 of a liquid crystal display. Thus, the colored layer 18 is provided separately from the substrate 12. In addition, the colored layer 18 is intended to act as a reflecting layer (col. 3, lines 60-65, "...so that light incident on the display will pass through the electrode layer 20 and reflect off the back paint layer 18."). Thus, Lu is directed to a backside substrate which reflects rather than absorbs light.

Kuroda discloses a colored substrate 12 for an optical disk. Kuroda is not directed to a liquid-crystal display device as in Lu. Given these two completely different devices, one would not have thought to turn to Kuroda for modifying Lu. Thus, it would not have been obvious to combine Lu and Kuroda.

More specifically, Lu is concerned with improving the display contrast of a liquid crystal **display device**, and more particularly, a colored display.<sup>2</sup> On the other hand, Kuroda is concerned with providing a high density **optical disk** which can be used with a conventional CD player.<sup>3</sup> Specifically, Kuroda is concerned with the spectrometry characteristics so that the light absorption rate is large for the near infrared ray band but small for the reproduced light wavelength band. There is no concern with visibility of a display.

The backside substrate in Lu *reflects* light (see above), whereas the colored substrate 12 in Kuroda *absorbs* light. Thus, there is no reason one of ordinary skill in the art would have employed the light-absorbing colored substrate 12 of Kuroda instead of the light-reflecting colored layer 18 and substrate 12 of Lu since this would change the operability of the device in Lu.

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<sup>2</sup> Col. 1, lines 6-10.

<sup>3</sup> Col. 1, lines 5-13.

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For at least the foregoing reasons, Appellants respectfully submit that Lu and Kuroda do not render obvious the inventions of Claims 1-2, 4 and 7-8.

**(2) §103(a) Obviousness Rejection of Claims 3 and 5**

Claims 3 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lu and Kuroda, as applied to Claim 2, and further in view of Fukuchi.

To summarize, the Examiner asserts that Fukuchi discloses the particular subject matter introduced by dependent Claims 3 and 5. The Examiner concludes that it would have been obvious to modify the combination of Lu and Kuroda by reference to Fukuchi in order to obtain a substrate that is lightweight and with good mechanical characteristics, and in order to prevent damages to the resin substrate. Appellants refer to page 3 of the May 21<sup>st</sup> final Office Action.

The Error in the Rejection

The error in the rejection is that the combination of Lu, Kuroda and Fukuchi does not establish a *prima facie* case of obviousness against the subject matter of Claims 3 and 5.

Why Claims 3 and 5 are Patentable Under 35 U.S.C. § 103

Fukuchi does not cure the deficiencies of Lu and Kuroda, which are noted above at Section VII(1) of this Brief. In particular, Fukuchi does not provide a “clear and particular” suggestion to modify Lu by replacing its substrate 12 and colored layer 18 with the colored resin substrate of Kuroda.

Thus, Claims 3 and 5 are patentable for at least the same reasons as independent Claim 2, by virtue of their dependency therefrom.

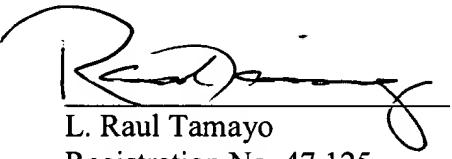
Appellants respectfully submit that Lu, Kuroda and Fukuchi do not render obvious the inventions of Claims 3 and 5.

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: April 6, 2005

**CLAIMS APPENDIX**

CLAIMS 1-5 and 7-8 ON APPEAL:

1. A liquid-crystal display device comprising a liquid-crystal panel, said liquid-crystal panel including:

a back side substrate constituted by a colored resin substrate having an electrode;

a visual side transparent substrate having a transparent electrode; and

a reflection type liquid-crystal layer interposed between said visual side substrate and said back side substrate.

2. A backside substrate comprising:

a colored resin substrate which is formed of at least a mixture of a transparent resin and a colorant, and

a transparent electrically conductive film on at least one side of said colored resin substrate,

wherein said backside substrate is attached to a visual side substrate having an electrode and a transparent resin.

3. A colored resin substrate according to claim 2, wherein said colored resin substrate is not thicker than 1 mm.

4. A colored resin substrate according to claim 2, wherein said colored resin substrate is black.

5. A colored resin substrate according to claim 2, wherein said colored resin substrate has a glass transition temperature of not lower than 90°C.

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7. A liquid-crystal display device according to claim 1, wherein said back side substrate disposed on the back side of said liquid-crystal panel is composed of a colored resin substrate formed of at least a mixture of a transparent resin and a colorant, further comprising a transparent electrically conductive film on at least one side of said colored resin substrate to form the backside substrate, and said reflection type liquid-crystal layer is of a macromolecular dispersion type or of a cholesteric liquid-crystal type.

8. A liquid-crystal display device as claimed in claim 1, wherein said back side substrate absorbs light.

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**EVIDENCE APPENDIX:**

Pursuant to 37 C.F.R. § 41.37(c)(1)(ix), submitted herewith are copies of any evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellants in the appeal.

(1) Examiner's Attachment to Final Office Action Mailed May 21, 2004 (two (2) pages - the definition of subclass 162 and the schedule of class 349).

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**RELATED PROCEEDINGS APPENDIX**

Submitted herewith are copies of decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).

NONE



# UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/782,201      | 02/14/2001  | Seiji Umemoto        | Q63077              | 9861             |

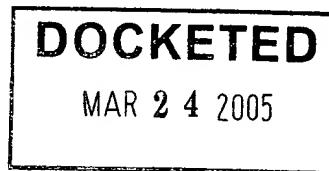
7590 03/23/2005

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EXAMINER

ART UNIT PAPER NUMBER

DATE MAILED: 03/23/2005



Please find below and/or attached an Office communication concerning this application or proceeding.

**Notification of Non-Compliant Appeal Brief  
(37 CFR 41.37)**

Application No.

09/782,201

Applicant(s)

UMEMOTO ET AL.

Examiner

Tai Duong

Art Unit

2871

APR 06 2005

DEMOCRATIC  
OFFICE

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on 11 January 2005 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file a complete new brief in compliance with 37 CFR 41.37 within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1.  The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2.  The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed or confirmed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3.  At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4.  (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5.  The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi))
6.  The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7.  The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8.  The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner and relied upon by appellant in the appeal, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9.  The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10.  Other (including any explanation in support of the above items):

The concise explanation of the subject matter defined in independent claims 1 and 2 must refer to the drawing by reference characters. In addition, for each independent claim involved in the appeal, the structure or material described in the specification as corresponding to each claimed function must be set forth with reference to the drawing by reference characters..

  
**ROBERT H. KIM**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**